

WE CLAIM:

1. A method for allocating MCU resources for a multipoint network event, said method comprising the steps of:

receiving an allocation request for the multipoint network event, said request at least associated with a number for the maximum MCU resources for the multipoint network event,

determining the number of MCU resources to allocate at the start of the multipoint network event, the start MCU resources allocation number less than or equal in value than the maximum MCU resources number.

2. The method of claim 1 wherein the step of receiving the allocation request originates in the plurality of MCUs.

3. The method of claim 1 wherein the step of receiving the allocation request originates in a common channel signaling interface.

4. The method of claim 1 wherein the step of receiving the allocation request originates as an external allocation request.

5. The method of claim 1 wherein the step of determining comprises the step of calculating:

$$R = \left[(R_{MAX}) (R_{SP}) \right]_{R_{SM}}$$

where: R = said Number of Resources to start

R_{MAX} = Maximum Resources

R_{SP} = Configurable Start Resource Percentage

R_{SM} = Configurable Minimum Start Resources

6. A method for time varying allocation of MCU resources during a multipoint network event, said method comprising the steps of:

5 determining the number of MCU resources to allocate for the start of the multipoint network event,

at each of a plurality of modeling intervals during the multipoint network event, adjusting the number of allocated MCU resources based on users actually in the multipoint network event.

7. The method of claim 6 wherein the step of determining comprises the step of calculating:

$$R = \left[(R_{MAX}) (R_{SP}) \right]_{R_{SM}}$$

where: R = said Number of Resources to start

5 R_{MAX} = Maximum Resources

R_{SP} = Configurable Start Resource Percentage

R_{SM} = Configurable Minimum Start Resources

8. The method of claim 7 wherein the step of adjusting comprises the step of calculating:

$$R_j = \left[\sum_{\text{events}} \left((R_{\text{actual}} + \frac{P_j}{1-S}) \right)^{R_{MAX}} \right] \left(\sum_{\text{events}} R_{\text{actual}} \right)^{+1}$$

Where:

5 R_j = Number of Resources at a modeling interval j of said plurality modeling intervals

R_{actual} = Number of Resources actually used

R_{MAX} = Maximum Resources

events = Number of multipoint network events

10 P_j = Probability Value at each of said plurality of modeling intervals j

S = Confidence Factor

9. A method for allocating resources for a multipoint network event, said method comprising the steps of:

obtaining available MCU capacity in a plurality of MCUs,

5 receiving an allocation request from an allocation requestor for the multipoint network event,

determining based on the received allocation request whether the multipoint network event can be started, if the multipoint network event can be started, the number of resources to allocate to start the multipoint network event, and, if the multipoint network event cannot be started, then informing the allocation requestor that the multipoint network event cannot be started,

allocating the number of resources to at least one MCU,

debiting the allocated resources from the available MCU capacity,

15 directing inbound users to the at least one MCU for participation in the multipoint network event.

10. The method of claim 9 wherein the step of determining comprises the step of calculating:

$$R = [(R_{MAX})(R_{SP})]_{R_{SM}}$$

where: R = said Number of Resources to start

5 R_{MAX} = Maximum Resources

R_{SP} = Configurable Start Resource Percentage

R_{SM} = Configurable Minimum Start Resources

11. The method of claim 9 wherein the step of receiving the allocation request originates in the plurality of MCUs.

12. The method of claim 9 wherein the step of receiving the allocation request originates in a common channel signaling interface.

13. The method of claim 9 wherein the step of receiving the allocation request originates as an external allocation request.

14. The method of claim 9 further comprising the step of:
at each of a plurality of modeling intervals, adjusting the number of resources based on the number of inbound users actually in the multipoint network event.

15. The method of claim 14 wherein the step of adjusting comprises the step of calculating:

$$R_j = \left[\sum_{\text{events}} \left((R_{\text{actual}} + \frac{P_j}{1-S}) \right)^{R_{\text{MAX}}} \right] \left(\sum_{\text{events}} R_{\text{actual}} \right) + 1$$

Where:

5 R_j = Number of Resources at a modeling interval j of said plurality modeling intervals

R_{actual} = Number of Resources actually used

R_{MAX} = Maximum Resources

events = Number of multipoint network events

10 P_j = Probability Value at each of said plurality of modeling intervals j

S = Confidence Factor

16. The method of claim 15 wherein the step of adjusting adjusts the number of resources at each modeling interval (j) based on a configurable value for S .

17. The method of claim 15 wherein the step of adjusting adjusts the number of resources at each modeling interval (j) is based on a self-tuning value for P_j .

18. The method of claim 17 wherein the self-tuning value for P_j comprises the step of calculating:

$$P_j = \frac{\sum_{i=1}^m (w_i)(\bar{R}_{i,j})}{\sum_{i=1}^m w_i}$$

Where: $\bar{R}_{i,j} = \frac{R_j}{\sum_{j=1}^n R_j}$ = normalized resource accumulation

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w_i = the counted number of events at tuning interval i

R_j = the number of resources that have become utilized during modeling interval j

n = the number of modeling intervals (j) in use

m = the number of tuning intervals (i) in use

19. A method for allocating resources for a plurality of multipoint network events, said method comprising the steps of:

obtaining available MCU capacity in a plurality of MCUs,

receiving allocation requests from an allocation requestor for

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the plurality of multipoint network events,

determining based on each of said plurality of received allocation requests, the number of resources to allocate to start the aforesaid multipoint network event,

10 allocating the number of resources to at least one MCU of said plurality of MCUs for the aforesaid multipoint network event,

at each of a plurality of modeling intervals during the aforesaid multipoint network event, adjusting the number of resources based on inbound users actually in the multipoint network event.

20. A method for tuning the allocation of MCU resources for multipoint network events, said method comprising the steps of:

counting the number of multipoint network events that have been accumulated within at least one predetermined tuning interval,

5 normalizing MCU resources actually utilized during each multipoint network event in each of the at least one predetermined tuning interval,

10 determining a probability value for future use of MCU resources for an upcoming multipoint network event based on the steps of counting and normalizing.

21. The method of claim 20 wherein the step of normalizing accumulates the number of resources at predetermined modeling intervals during each multipoint event.

22. The method of claim 20 wherein the predetermined tuning interval is at least three orders of magnitude in time greater than the predetermined modeling interval.

23. The method of claim 22 wherein the tuning interval is at least a day and the modeling interval is at least a minute.